Amendments to the Claims

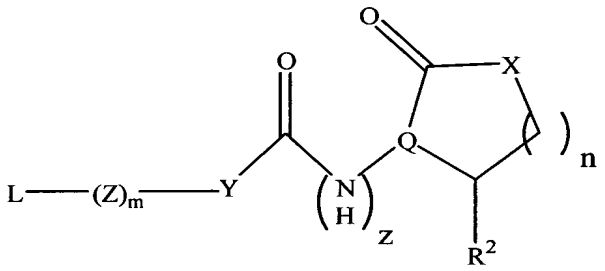
This listing of claims will replace all prior versions, and listings, of claims in the application:

1-15 (canceled)

16. (currently amended) A method for detecting ~~a Gram negative bacteria autoinducer~~ an autoinducer of a Gram negative bacterium in a sample comprising:

adding to the sample an antibody or a functionally active fragment thereof which binds specifically to the autoinducer of ~~a~~ the Gram negative bacterium ~~according to~~ having Formula (I):

(I)



wherein ~~where~~ X is O, S, N-(C_1—C_6) alkyl, NR^2, N-phenyl; Y is C_1—C_6 straight or branched alkyl, C_1—C_6 straight or branched alkenyl, C_1—C_6 straight or branched alkynyl; Z is C=O, C=S, CHOH, C=N-NR^1, C=N-OH, C_1—C_8 straight or branched alkyl, C_1—C_8 straight or branched alkenyl, C_1—C_8 straight or branched alkynyl; L is C_1—C_{18} straight or branched alkyl, C_1—C_{18} straight or branched alkenyl, C_1—C_{18} straight or branched alkynyl, or —CO_2H, —CO_2R^1, —CHO, —C≡N, —N=C=O, —N=C=S, OH, OR^1, —CH=CH—CH_2Br, —CH=CH—CH_2Cl, —SAc or SH, where R^1 is C_1—C_6 straight or branched alkyl, m is 0 or 1; z is 0 or 1; R^2 is H, C_1—C_6 straight or branched alkyl, C_1—C_6 straight or branched alkenyl or C_1—C_6 straight or branched alkynyl, or CO_2H; and Q is CH or N; and n is 0-3 with the proviso that when n is 0, X is N—(C_1—C_6 alkyl) or N-phenyl; and

detecting whether binding occurs between the antibody, or the functionally active fragment thereof, and the autoinducer of the Gram negative bacterium ~~occurs~~, wherein said binding indicates presence of the autoinducer in the sample.

17. (currently amended) The method according to claim 16 wherein the Gram negative bacterium is selected from the group consisting of *Aeromonas hydrophila, Agrobacterium tumefaciens, Burkholderia cepacia, Chromobacterium violaceum, Enterobacter agglomerans, Erwinia stewarti, Erwinia carotovora, Escherichia coli, Nitrosomas europea, Photobacterium fischeri, Pseudomonas aeruginosa, Pseudomonas aureofaciens, Rhizobium leguminosarum, Serratia liquefaciens,* and *Vibrio harveyi.*

18-34. (canceled)

35. (new) The method according to claim 16 wherein the antibody or the functionally active fragment thereof comprises a label.

36. (new) The method according to claim 35 wherein the label is an enzyme, a radioactive label, a fluorescent label, a chemiluminescent compound, or a bioluminescent compound.

37. (new) The method according to claim 16 wherein said detecting is carried out by ELISA, radioimmunoassay, gel-diffusion precipitation reaction assay, immunodiffusion assay, agglutination assay, fluorescent immunoassay, protein A immunoassay, or immunoelectrophoresis assay.

38. (new) The method according to claim 16 wherein the sample is a histological sample obtained from a patient.

39. (new) The method according to claim 38 wherein said detecting is carried out *in situ.*

40. (new) The method according to claim 16 wherein the sample is selected from the group consisting of biological fluids, tissue extracts, freshly harvested cells, or lysates of cultured cells.